



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,476	09/20/2006	Yoshiaki Kojima	PC 3218.01 US	3223
52737	7590	08/20/2007		
DVA/PEC-IPD 2265 E. 220TH STREET LONG BEACH, CA 90810			EXAMINER SMYTH, ANDREW P	
			ART UNIT 2881	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

TH

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,476	<b>Applicant(s)</b> KOJIMA, YOSHIAKI	
	<b>Examiner</b> Andrew Smyth	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/20/2006; 09/20/2006</u> . | 6) <input type="checkbox"/> Other: ____  |

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al. (US 4,467,211).

Regarding applicant's claim 1, Smith (figure 8A) discloses: an electron beam lithography (title) apparatus for concentrically drawing a plurality of circles on a substrate by applying an electron beam while rotating the substrate (22), the electron beam lithography apparatus comprising: a beam deflection (33) portion for deflecting the electron beam to change an irradiation position of the electron beam; a synchronization signal generation portion (24, 60) for generating a synchronization signal which is in synchronization with the rotation of the substrate (14), a controller for controlling the beam deflection portion on the basis of the synchronization signal (24, 53, 54, 55, 56, 58) in order to deflect the electron beam in a rotational radial direction of the substrate and in a rotational tangential direction of the substrate opposite to a rotational direction of the substrate, while drawing transition is performed from one circle to another circle; and a beam cutoff portion (52, 41) for cutting off the irradiation of the electron beam on the substrate, for a period during the electron beam is deflected in the rotational radial direction.

Regarding applicant's claim 2, Smith (figure 8A) discloses: the electron beam lithography apparatus, wherein the controller (24) deflects (33) the electron beam in the rotational tangential direction (57, 58, 59) of the substrate being the same direction as the movement of the substrate before drawing transition is performed from the one circle to the another circle.

Regarding applicant's claim 3, Smith (figure 8A) discloses: the electron beam lithography apparatus, wherein the controller (24) deflects (33, 54) the electron beam in the rotational tangential direction so as to overwrite a portion of the circle including a drawing connection position.

Regarding applicant's claim 4, Smith (figure 8A) discloses: the electron beam lithography apparatus, wherein the beam cutoff section (41, 52) varies an intensity of the electron beam applied to the substrate at a predetermined rate (24, 19) before or after a period when the electron beam is deflected (33) in the rotational radial direction.

Regarding applicant's claim 5, Smith (figure 8A) inherently teaches in the apparatus: an electron beam lithography method (title) for drawing a plurality of circles on a substrate by applying an electron beam while rotating the substrate (22), the method comprising: a transition controlling step of deflecting (33) the electron beam in a rotational radial direction (19, 24, 58, 56, 33) of the substrate (14) and in a rotational tangential direction of the substrate opposite to a rotational direction of the substrate, upon performing drawing transition from one circle to another circle; and a beam cutoff step (52, 41, 33) of cutting off the irradiation of the electron beam on the substrate, for a period (19, 24) during the electron beam is deflected in the rotational radial direction.

Regarding applicant's claim 6, Smith (figure 8A) inherently teaches in the apparatus: the electron beam lithography method (title), wherein the transition controlling step includes a step of deflecting (33) the electron beam in the rotational tangential direction of the substrate (14) being the same direction as the movement (33) of the substrate before drawing transition from the one circle to the another circle is performed.

Regarding applicant's claim 7, Smith (figure 8A) inherently teaches in the apparatus: the electron beam lithography method (title), wherein the transition controlling step (24) deflects (33) the electron beam in the rotational (33) tangential direction so as to overwrite a portion of the circle including a drawing connection position.

Regarding applicant's claim 8, Smith (figure 8A) inherently teaches in the apparatus: the electron beam lithography method (title), comprising the step of varying an intensity (52) of the electron beam applied to the substrate (14) at a predetermined rate (24) before or after a period when the electron beam is deflected (33) in the rotational (22) radial direction.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Smyth whose telephone number is 571-270-1746. The examiner can normally be reached on 7:30AM - 5:00PM; Monday thru Friday.

Art Unit: 2881

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.S.

  
**ROBERT KIM**  
**SUPERVISORY PATENT EXAMINER**